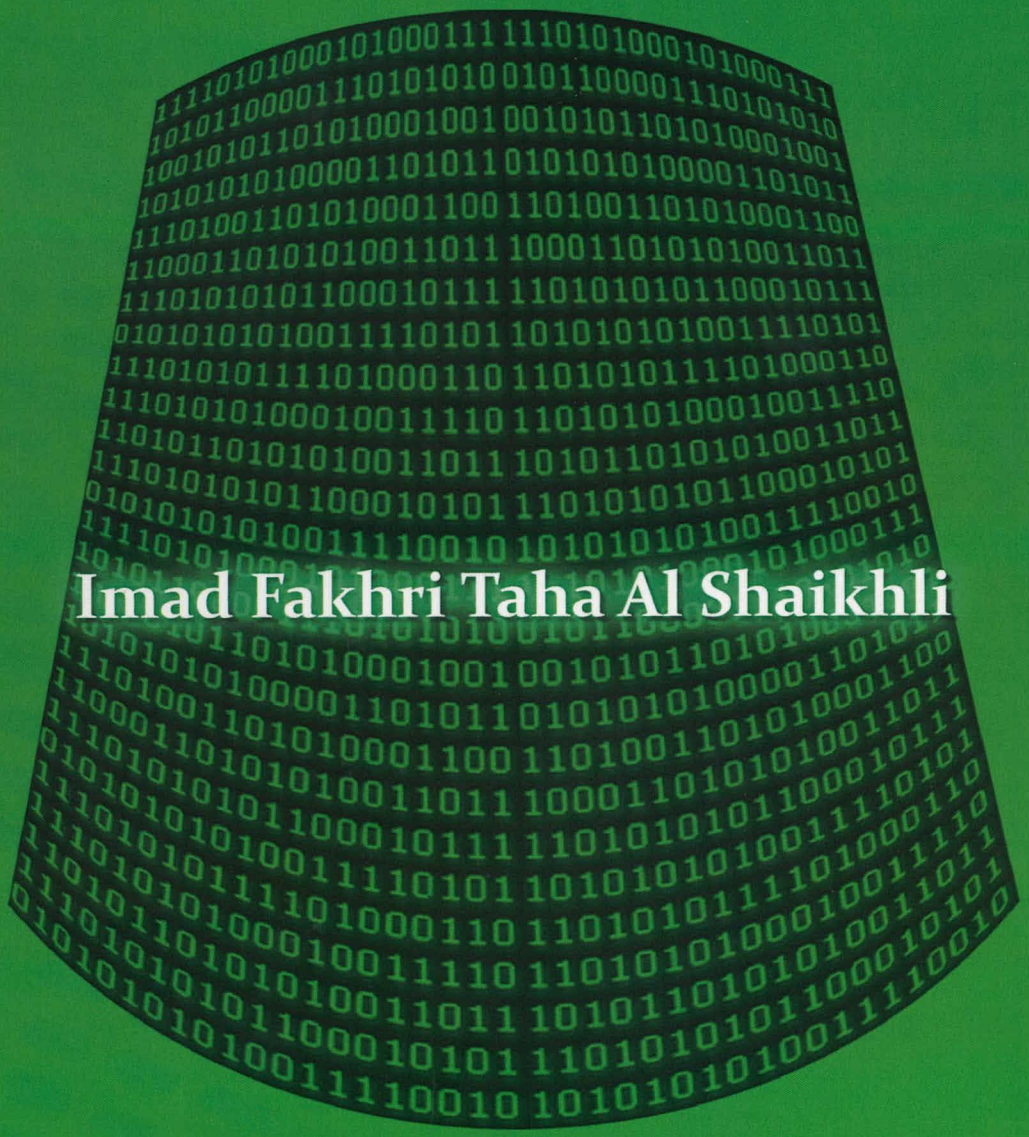
Cryptography

Past, Present and Future



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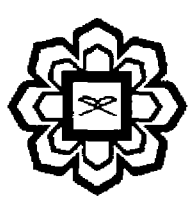

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ABSTRACT

In this article we will talk about the description of SHA family hash function. Also we will introduce into SHA-0 and its security. Also, we will talk about the SHA-1, SHA-2 and their algorithms. Moreover, we will describe security of the SHA family of hash functions.

DESCRIPTION

SHA-0, SHA-1 and SHA-2 belongs to a family of algorithms designed by the National Security Agency, USA and was published by the US government as a standard (NIST 1994) (Konhiem, 2007). These algorithms were basically inspired by MD4 however several of its blocks are different from that of MD4 (Chabaud & Joux, 1998; Preneel, 2003). The first version was known as SHA-0 (published in 1993) then came the SHA-1(published in 1996) (Turner et al., 2011) and then the SHA2. According to Preneel (2003), the SHA-1 is the most used in today's applications. It is used in Secure Shell (SHH), Secure Socket Layers (SSL) and others. The importance of SHA-1 and SHA-2 has made it necessary to standardize its procedure, hence the SHS (Secure Hash Standard) was published by the National Institute of Standards and Technology (NIST), the latest version is the NIST FIPS 180-3.